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Laser field distribution near inclined taper optical antenna

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Abstract

© Published under licence by IOP Publishing Ltd. This work focuses on the mechanism of laser field enhancement within a gap between a taper plasmonic nanoantenna and a dielectric substrate in the inverted optical configuration. We show that field enhancement factor depends on several parameters such as: tip-sample distance, radius of curvature of the tip and its inclination angle in respect to the substrate. In particular, a relation between the field enhancement near the tip apex and the inclination angle is deduced. Numerical simulation and optimization were performed within the framework of the FDTD method and the Green function formalism.

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